

WEST Search History

DATE: Thursday, April 05, 2007

Hide?	Set Name	Query	Hit Count
		<i>DB=PGPB,USPT,USOC,EPAB,DWPI; PLUR=YES; OP=ADJ</i>	
<input type="checkbox"/>	L1	20030007152	2
<input type="checkbox"/>	L2	L1 and four wave mixing	1
<input type="checkbox"/>	L3	L2 and microarray	0
<input type="checkbox"/>	L4	L1 and microarray	0
<input type="checkbox"/>	L5	L1 and array	2
<input type="checkbox"/>	L6	L1 and biochip	0
<input type="checkbox"/>	L7	l1 and chip	0
<input type="checkbox"/>	L8	l1 and (DNA or nucleic acid or oligonucleotide or polynucleotide or probe)	1
<input type="checkbox"/>	L9	6248540.pn.	2
<input type="checkbox"/>	L10	L9 and array	2
<input type="checkbox"/>	L11	L10 and four wave mixing	1
<input type="checkbox"/>	L12	(biochip or array or microarray) and optical spectroscopy	826
<input type="checkbox"/>	L13	L12 and wave mixing	45
<input type="checkbox"/>	L14	L13 and (DNA or oligonucleotide or probe or nucleic acid)	40
<input type="checkbox"/>	L15	(degenerate near (four wave mixing)) or DFWM	449
<input type="checkbox"/>	L16	L15 and (array or substrate or microarray or biochip or chip)	290
<input type="checkbox"/>	L17	L16 and (DNA or oligonucleotide or nucleic acid)	33
<input type="checkbox"/>	L18	10/540224	1
<input type="checkbox"/>	L19	((microarray or array or biochip or chip) same (DNA or polynucleotide or probe or nucleic acid or oligonucleotide))	75955
<input type="checkbox"/>	L20	optical near (degenerate four-wave mixing or DFWM)	27
<input type="checkbox"/>	L21	(optical near (degenerate four-wave mixing or DFWM))	27
<input type="checkbox"/>	L22	L21 and L18	1
<input type="checkbox"/>	L23	L21 and L19	17
<input type="checkbox"/>	L24	L23 and scan\$	17
<input type="checkbox"/>	L25	L24 and signal\$	17
<input type="checkbox"/>	L26	L25 and background	16
<input type="checkbox"/>	L27	L26 and (forward near scatter\$)	1
<input type="checkbox"/>	L28	L25 and (forward near scatter\$)	2
<input type="checkbox"/>	L29	L20 and (forward near scatter\$)	2
<input type="checkbox"/>	L30	L26 and (pump near beam)	1
<input type="checkbox"/>	L31	L26 and (pump)	9
<input type="checkbox"/>	L32	L31 and beam	9
<input type="checkbox"/>	L33	L32 and probe	9

<input type="checkbox"/>	L34	L33	9
<input type="checkbox"/>	L35	L33 and scatter\$	9
<input type="checkbox"/>	L36	L21 and metal	22
<input type="checkbox"/>	L37	L36 and (capillary electrophoresis)	2
<input type="checkbox"/>	L38	L36 and (electrophoresis)	2

END OF SEARCH HISTORY

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NEWS	1		Web Page URLs for STN Seminar Schedule - N. America
NEWS	2		"Ask CAS" for self-help around the clock
NEWS	3	DEC 18	CA/CAPLUS pre-1967 chemical substance index entries enhanced with preparation role
NEWS	4	DEC 18	CA/CAPLUS patent kind codes updated
NEWS	5	DEC 18	MARPAT to CA/CAPLUS accession number crossover limit increased to 50,000
NEWS	6	DEC 18	MEDLINE updated in preparation for 2007 reload
NEWS	7	DEC 27	CA/CAPLUS enhanced with more pre-1907 records
NEWS	8	JAN 08	CHEMLIST enhanced with New Zealand Inventory of Chemicals
NEWS	9	JAN 16	CA/CAPLUS Company Name Thesaurus enhanced and reloaded
NEWS	10	JAN 16	IPC version 2007.01 thesaurus available on STN
NEWS	11	JAN 16	WPIDS/WPINDEX/WPIX enhanced with IPC 8 reclassification data
NEWS	12	JAN 22	CA/CAPLUS updated with revised CAS roles
NEWS	13	JAN 22	CA/CAPLUS enhanced with patent applications from India
NEWS	14	JAN 29	PHAR reloaded with new search and display fields
NEWS	15	JAN 29	CAS Registry Number crossover limit increased to 300,000 in multiple databases
NEWS	16	FEB 15	PATDPASPC enhanced with Drug Approval numbers
NEWS	17	FEB 15	RUSSIAPAT enhanced with pre-1994 records
NEWS	18	FEB 23	KOREAPAT enhanced with IPC 8 features and functionality
NEWS	19	FEB 26	MEDLINE reloaded with enhancements
NEWS	20	FEB 26	EMBASE enhanced with Clinical Trial Number field
NEWS	21	FEB 26	TOXCENTER enhanced with reloaded MEDLINE
NEWS	22	FEB 26	IFICDB/IFIPAT/IFIUDB reloaded with enhancements
NEWS	23	FEB 26	CAS Registry Number crossover limit increased from 10,000 to 300,000 in multiple databases
NEWS	24	MAR 15	WPIDS/WPIX enhanced with new FRAGHITSTR display format
NEWS	25	MAR 16	CASREACT coverage extended
NEWS	26	MAR 20	MARPAT now updated daily
NEWS	27	MAR 22	LWPI reloaded
NEWS	28	MAR 30	RDISCLOSURE reloaded with enhancements
NEWS	29	MAR 30	INPADOCDB will replace INPADOC on STN
NEWS	30	APR 02	JICST-EPLUS removed from database clusters and STN
NEWS EXPRESS	NOVEMBER 10 CURRENT WINDOWS VERSION IS V8.01c, CURRENT MACINTOSH VERSION IS V6.0c(ENG) AND V6.0Jc(JP), AND CURRENT DISCOVER FILE IS DATED 25 SEPTEMBER 2006.		
NEWS HOURS	STN Operating Hours Plus Help Desk Availability		
NEWS LOGIN	Welcome Banner and News Items		
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NEWS X25	X.25 communication option no longer available		

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FILE 'HOME' ENTERED AT 12:35:01 ON 05 APR 2007

COST IN U.S. DOLLARS	SINCE FILE ENTRY	TOTAL SESSION
FULL ESTIMATED COST	0.42	0.42

FILES 'MEDLINE, CAPLUS, EMBASE, BIOTECHDS, SCISEARCH, BIOSIS'
ENTERED AT 12:36:15 ON 05 APR 2007
ALL COPYRIGHTS AND RESTRICTIONS APPLY. SEE HELP USAGETERMS FOR DETAILS.

6 FILES IN THE FILE LIST

=> file
ENTER A FILE NAME OR (HOME):end

=> s (four wave mixing) and microchip
L1 13 (FOUR WAVE MIXING) AND MICROCHIP

=> s microchip and wave-mixing
L2 13 MICROCHIP AND WAVE-MIXING

=> dup rem l1
PROCESSING COMPLETED FOR L1
L3 8 DUP REM L1 (5 DUPLICATES REMOVED)

=> dup rem l2
PROCESSING COMPLETED FOR L2
L4 8 DUP REM L2 (5 DUPLICATES REMOVED)

=> d ibib abs ibib abs 1-8 l3

L3 ANSWER 1 OF 8 SCISEARCH COPYRIGHT (c) 2007 The Thomson Corporation on
STN

ACCESSION NUMBER: 2006:653014 SCISEARCH

THE GENUINE ARTICLE: 056VM

TITLE: Enhanced visible continuum generation from a
microchip 1064nm laser

AUTHOR: Xiong C (Reprint); Witkowska A; Leon-Saval S G; Birks T A;
Wadsworth W J

CORPORATE SOURCE: Univ Bath, Dept Phys, Ctr Photon & Photon Mat, Bath BA2
7AY, Avon, England (Reprint)
w.j.wadsworth@bath.ac.uk

COUNTRY OF AUTHOR: England

SOURCE: OPTICS EXPRESS, (26 JUN 2006) Vol. 14, No. 13, pp.
6188-6193.

ISSN: 1094-4087.

PUBLISHER: OPTICAL SOC AMER, 2010 MASSACHUSETTS AVE NW, WASHINGTON,
DC 20036 USA.

DOCUMENT TYPE: Article; Journal

LANGUAGE: English

REFERENCE COUNT: 9

ENTRY DATE: Entered STN: 13 Jul 2006

Last Updated on STN: 13 Jul 2006

ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

AB We demonstrate a cascaded nonlinear process using pump conversion to
742 nm by four-wave mixing in the normal

dispersion regime then continuum generation by modulation instability to generate bright single-mode visible continuum with an average power up to -20 dBm/nm, from a compact 1064 nm infrared source in a monolithic single-mode photonic crystal fibre with a tapered section in one end.

ACCESSION NUMBER: 2006:653014 SCISEARCH
THE GENUINE ARTICLE: 056VM
TITLE: Enhanced visible continuum generation from a microchip 1064nm laser
AUTHOR: Xiong C (Reprint); Witkowska A; Leon-Saval S G; Birks T A; Wadsworth W J
CORPORATE SOURCE: Univ Bath, Dept Phys, Ctr Photon & Photon Mat, Bath BA2 7AY, Avon, England (Reprint)
w.j.wadsworth@bath.ac.uk
COUNTRY OF AUTHOR: England
SOURCE: OPTICS EXPRESS, (26 JUN 2006) Vol. 14, No. 13, pp. 6188-6193.
ISSN: 1094-4087.
PUBLISHER: OPTICAL SOC AMER, 2010 MASSACHUSETTS AVE NW, WASHINGTON, DC 20036 USA.
DOCUMENT TYPE: Article; Journal
LANGUAGE: English
REFERENCE COUNT: 9
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L3 ANSWER 2 OF 8 CAPLUS COPYRIGHT 2007 ACS on STN DUPLICATE 1

ACCESSION NUMBER: 2004:650170 CAPLUS
DOCUMENT NUMBER: 141:184214
TITLE: Sensitive sensing based on optical nonlinear wave mixing
INVENTOR(S): Tong, William G.
PATENT ASSIGNEE(S): San Diego State University Foundation, USA
SOURCE: PCT Int. Appl., 58 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004068087	A2	20040812	WO 2004-US2409	20040127
WO 2004068087	A3	20050915		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI				
US 2006263777	A1	20061123	US 2006-540224	20060808
PRIORITY APPLN. INFO.:			US 2003-443225P	P 20030127
			WO 2004-US2409	W 20040127

AB Techniques and systems for using nonlinear four wave mixing to optically measure microarrays with sample cells of biol. or chemical materials. Examples of suitable microarrays include but are not limited to DNA microchips and capillary electrophoresis microarrays.

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DOCUMENT NUMBER: 141:184214
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INVENTOR(S): mixing
 PATENT ASSIGNEE(S): Tong, William G.
 SOURCE: San Diego State University Foundation, USA
 PCT Int. Appl., 58 pp.
 CODEN: PIXXD2
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
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PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004068087	A2	20040812	WO 2004-US2409	20040127
WO 2004068087	A3	20050915		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI				
US 2006263777	A1	20061123	US 2006-540224	20060808
PRIORITY APPLN. INFO.:			US 2003-443225P	P 20030127
			WO 2004-US2409	W 20040127

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L3 ANSWER 3 OF 8 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2004:1101741 CAPLUS

DOCUMENT NUMBER: 143:218818

TITLE: Compact supercontinuum generation and four-wave mixing in PCF with 10 ns laser pulses

AUTHOR(S): Wadsworth, W. J.; Joly, N. Y.; Biancalana, F.; Knight, J. C.; Birks, T. A.; Russell, P. St. J.

CORPORATE SOURCE: Optoelectronics Group, Department of Physics, University of Bath, Bath, BA2 7AY, UK

SOURCE: Trends in Optics and Photonics (2004), 96/B (Conference on Lasers and Electro-Optics, 2004), CThC3/1-CThC3/2
 CODEN: TOPRBS

PUBLISHER: Optical Society of America

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The authors report broad flat supercontinuum, 500-1750 nm, using a kHz train of nanosecond Q-switched microchip laser pulses at 1064 nm or 1047 nm. The same systems exhibit strong parametric generation of FWM peaks, e.g. at 732/1945 nm or 895/1315 nm.

ACCESSION NUMBER: 2004:1101741 CAPLUS

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peaks, e.g. at 732/1945 nm or 895/1315 nm.
REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 4 OF 8 MEDLINE on STN DUPLICATE 2
ACCESSION NUMBER: 2003453285 MEDLINE
DOCUMENT NUMBER: PubMed ID: 14514112
TITLE: Generation of a broadband single-mode supercontinuum in a
conventional dispersion-shifted fiber by use of a
subnanosecond microchip laser.
AUTHOR: Mussot Arnaud; Sylvestre Thibaut; Provino Laurent;
Maillotte Herve
CORPORATE SOURCE: Laboratoire d'Optique P. M. Duffieux, Unite Mixte de
Recherche, Centre National de la Recherche
Scientifique/Universite de Franche-Comte 6603, 25030
Besancon cedex, France.. amussot@univ-fcomte.fr
SOURCE: Optics letters, (2003 Oct 1) Vol. 28, No. 19, pp. 1820-2.
Journal code: 7708433. ISSN: 0146-9592.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: NONMEDLINE; PUBMED-NOT-MEDLINE
ENTRY MONTH: 200311
ENTRY DATE: Entered STN: 30 Sep 2003
Last Updated on STN: 8 Nov 2003
Entered Medline: 7 Nov 2003

AB We report the experimental generation, simply by use of a subnanosecond
microchip laser at 532 nm and a conventional dispersion-shifted
fiber, of a supercontinuum that spans more than 1100 nm. We show by
detailed spectral analysis that this supercontinuum originates from a
preliminary four-wave mixing process with
multimode phase matching and subsequent double-cascade stimulated Raman
scattering and is transversely single mode as a result of Raman-induced
mode competition. This technique is believed to be the simplest
configuration that allows one to generate a stable supercontinuum.

ACCESSION NUMBER: 2003453285 MEDLINE
DOCUMENT NUMBER: PubMed ID: 14514112
TITLE: Generation of a broadband single-mode supercontinuum in a
conventional dispersion-shifted fiber by use of a
subnanosecond microchip laser.
AUTHOR: Mussot Arnaud; Sylvestre Thibaut; Provino Laurent;
Maillotte Herve
CORPORATE SOURCE: Laboratoire d'Optique P. M. Duffieux, Unite Mixte de
Recherche, Centre National de la Recherche
Scientifique/Universite de Franche-Comte 6603, 25030
Besancon cedex, France.. amussot@univ-fcomte.fr
SOURCE: Optics letters, (2003 Oct 1) Vol. 28, No. 19, pp. 1820-2.
Journal code: 7708433. ISSN: 0146-9592.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: NONMEDLINE; PUBMED-NOT-MEDLINE
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mode competition. This technique is believed to be the simplest

configuration that allows one to generate a stable supercontinuum.

L3 ANSWER 5 OF 8 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2002:507355 CAPLUS
DOCUMENT NUMBER: 137:192365
TITLE: Stokes-like emissions from laser-diode-pumped microchip neodymium-doped solid-state lasers
AUTHOR(S): Chern, Jyh-Long; Kubota, Tamaki; Lim, Tsong-Shin; Otsuka, Kenju
CORPORATE SOURCE: Department of Physics, National Cheng Kung University, Tainan, 70101, Taiwan
SOURCE: Journal of the Optical Society of America B: Optical Physics (2002), 19(7), 1668-1675
CODEN: JOBPDE; ISSN: 0740-3224
PUBLISHER: Optical Society of America
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Stokes-like IR (1560-1600-nm) emissions, which were observed in laser-diode- (LD-) pumped microchip Nd-doped lasers, are reexamd. exptl. Dependences of IR emissions on pump wavelengths, pump densities, and operating temps. are studied. The response of IR emissions to coherent probe-beam injection is studied using a tunable LD light source. Optical phonons emitted through Auger recombination processes that result from LD high-d. pumping probably induce resonant intracavity stimulated phonon-sideband emissions.

ACCESSION NUMBER: 2002:507355 CAPLUS
DOCUMENT NUMBER: 137:192365
TITLE: Stokes-like emissions from laser-diode-pumped microchip neodymium-doped solid-state lasers
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CORPORATE SOURCE: Department of Physics, National Cheng Kung University, Tainan, 70101, Taiwan
SOURCE: Journal of the Optical Society of America B: Optical Physics (2002), 19(7), 1668-1675
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REFERENCE COUNT: 23 THERE ARE 23 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 6 OF 8 CAPLUS COPYRIGHT 2007 ACS on STN DUPLICATE 3

ACCESSION NUMBER: 2002:258478 CAPLUS
DOCUMENT NUMBER: 136:408687
TITLE: Supercontinuum generation in air-silica microstructured fibers with nanosecond and femtosecond pulse pumping
AUTHOR(S): Dudley, John M.; Provino, Laurent; Grossard, Nicolas; Maillotte, Herve; Windeler, Robert S.; Eggleton, Benjamin J.; Coen, Stephane
CORPORATE SOURCE: Laboratoire d'Optique P. M. Duffieux, Centre National de la Recherche Scientifique, Unite Mixte de Recherche 6603, and Institut des Mirotechniques de Franche-Comte, Federation de Recherche 67, Universite, de Franche-Comte, Besancon, Fr.

SOURCE: Journal of the Optical Society of America B: Optical
Physics (2002), 19(4), 765-771
CODEN: JOBPDE; ISSN: 0740-3224
PUBLISHER: Optical Society of America
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The authors study the generation of supercontinua in air-SiO₂ microstructured fibers by both nanosecond and femtosecond pulse excitation. In the nanosecond expts., a 300-nm broadband visible continuum was generated in a 1.8-m length of fiber pumped at 532 nm by 0.8-ns pulses from a frequency-doubled passively Q-switched Nd:YAG microchip laser. At this wavelength, the dominant mode excited under the conditions of continuum generation is the LP₁₁ mode, and, with nanosecond pumping, self-phase modulation is negligible and the continuum generation is dominated by the interplay of Raman and parametric effects. The spectral extent of the continuum is well explained by calcns. of the parametric gain curves for 4-wave mixing about the zero-dispersion wavelength of the LP₁₁ mode. In the femtosecond expts., an 800-nm broadband visible and near-IR continuum was generated in a 1-m length of fiber pumped at 780 nm by 100-fs pulses from a Kerr-lens model-locked Ti:sapphire laser. At this wavelength, excitation and continuum generation occur in the LP₀₁ mode, and the spectral width of the observed continuum is consistent with the phase-matching bandwidth for parametric processes calculated for this fiber mode. In addition, numerical simulations based on an extended nonlinear Schrodinger equation were used to model supercontinuum generation in the femtosecond regime, with the simulation results reproducing the major features of the exptl. observed spectrum.

ACCESSION NUMBER: 2002:258478 CAPLUS

DOCUMENT NUMBER: 136:408687

TITLE: Supercontinuum generation in air-silica
microstructured fibers with nanosecond and femtosecond
pulse pumping

AUTHOR(S): Dudley, John M.; Provino, Laurent; Grossard, Nicolas;
Maillotte, Herve; Windeler, Robert S.; Eggleton,
Benjamin J.; Coen, Stephane

CORPORATE SOURCE: Laboratoire d'Optique P. M. Duffieux, Centre National
de la Recherche Scientifique, Unite Mixte de Recherche
6603, and Institut des Mirotechniques de
Franche-Comte, Federation de Recherche 67, Universite,
de Franche-Comte, Besancon, Fr.

SOURCE: Journal of the Optical Society of America B: Optical
Physics (2002), 19(4), 765-771
CODEN: JOBPDE; ISSN: 0740-3224

PUBLISHER: Optical Society of America

DOCUMENT TYPE: Journal

LANGUAGE: English

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based on an extended nonlinear Schrodinger equation were used to model supercontinuum generation in the femtosecond regime, with the simulation results reproducing the major features of the exptl. observed spectrum.

REFERENCE COUNT: 36 THERE ARE 36 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 7 OF 8 CAPLUS COPYRIGHT 2007 ACS on STN DUPLICATE 4

ACCESSION NUMBER: 2000:347428 CAPLUS

DOCUMENT NUMBER: 133:24317

TITLE: 1.5- μ m emissions from laser-diode-pumped Nd-doped microchip solid-state lasers

AUTHOR(S): Hwong, Siao-Lung; Chern, Jyh-Long; Otsuka, Kenju; Huang, Yu-Hsiang; Kawai, Ryoji; Ohki, Kazuyoshi

CORPORATE SOURCE: Department of Physics, National Cheng Kung University, Tainan, 70101, Taiwan

SOURCE: Optics Letters (2000), 25(9), 646-648

CODEN: OPLEDP; ISSN: 0146-9592

PUBLISHER: Optical Society of America

DOCUMENT TYPE: Journal

LANGUAGE: English

AB 1.5- μ m emissions from Nd:YAG, Nd:YVO₄, and LiNdP₄O₁₂ microchip lasers pumped by laser diodes were observed. These coherent emissions are attributed to the effect of high-energy modified lattice vibration owing to the existence of Nd ions as well as to stimulated intracavity Raman scattering enhanced by the microchip configuration. A 4-wave mixing process involving 2 lasing fields and a Stokes field was identified as the generator of new adjacent 1.5- μ m emission.

ACCESSION NUMBER: 2000:347428 CAPLUS

DOCUMENT NUMBER: 133:24317

TITLE: 1.5- μ m emissions from laser-diode-pumped Nd-doped microchip solid-state lasers

AUTHOR(S): Hwong, Siao-Lung; Chern, Jyh-Long; Otsuka, Kenju; Huang, Yu-Hsiang; Kawai, Ryoji; Ohki, Kazuyoshi

CORPORATE SOURCE: Department of Physics, National Cheng Kung University, Tainan, 70101, Taiwan

SOURCE: Optics Letters (2000), 25(9), 646-648

CODEN: OPLEDP; ISSN: 0146-9592

PUBLISHER: Optical Society of America

DOCUMENT TYPE: Journal

LANGUAGE: English

AB 1.5- μ m emissions from Nd:YAG, Nd:YVO₄, and LiNdP₄O₁₂ microchip lasers pumped by laser diodes were observed. These coherent emissions are attributed to the effect of high-energy modified lattice vibration owing to the existence of Nd ions as well as to stimulated intracavity Raman scattering enhanced by the microchip configuration. A 4-wave mixing process involving 2 lasing fields and a Stokes field was identified as the generator of new adjacent 1.5- μ m emission.

REFERENCE COUNT: 18 THERE ARE 18 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 8 OF 8 SCISEARCH COPYRIGHT (c) 2007 The Thomson Corporation on STN

ACCESSION NUMBER: 1995:197296 SCISEARCH

THE GENUINE ARTICLE: QM885

TITLE: EFFICIENT DEGENERATE 4-WAVE-MIXING IN A DIODE-PUMPED MICROCHIP ND-YVO₄ AMPLIFIER

AUTHOR: BRIGNON A (Reprint); FEUNET G; HUIGNARD J P; POCHOLLE J P

CORPORATE SOURCE: THOMSON CSF, CENT RECH LAB, F-91404 ORSAY, FRANCE (Reprint)

COUNTRY OF AUTHOR: FRANCE

SOURCE: OPTICS LETTERS, (15 MAR 1995) Vol. 20, No. 6, pp. 548-550. ISSN: 0146-9592.

PUBLISHER: OPTICAL SOC AMER, 2010 MASSACHUSETTS AVE NW, WASHINGTON, DC 20036.

DOCUMENT TYPE: Article; Journal
FILE SEGMENT: PHYS; ENGI
LANGUAGE: English
REFERENCE COUNT: 14
ENTRY DATE: Entered STN: 1995
Last Updated on STN: 1995

ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

AB The process of saturable-gain degenerate four-wave mixing in a diode-pumped microchip Nd:YVO4 amplifier is investigated. To enhance the efficiency of the interaction, multipass geometries are employed in which the weak signal beam and therefore the conjugate beam experience several passes in the gain medium. Degenerate four-wave mixing reflectivities as high as $R = 10\%$ and $R = 170\%$ have been obtained experimentally for 130-W diode pumping with two-pass and four-pass geometries, respectively. Finally, the imaging capabilities of the volume population hologram written in the Nd:YVO4 amplifier are demonstrated.

ACCESSION NUMBER: 1995:197296 SCISEARCH

THE GENUINE ARTICLE: QM885

TITLE: EFFICIENT DEGENERATE 4-WAVE-MIXING IN A DIODE-PUMPED MICROCHIP ND-YVO4 AMPLIFIER

AUTHOR: BRIGNON A (Reprint); FEUGNET G; HUIGNARD J P; POCHOLLE J P

CORPORATE SOURCE: THOMSON CSF, CENT RECH LAB, F-91404 ORSAY, FRANCE (Reprint)

COUNTRY OF AUTHOR: FRANCE

SOURCE: OPTICS LETTERS, (15 MAR 1995) Vol. 20, No. 6, pp. 548-550.
ISSN: 0146-9592.

PUBLISHER: OPTICAL SOC AMER, 2010 MASSACHUSETTS AVE NW, WASHINGTON, DC 20036.

DOCUMENT TYPE: Article; Journal

FILE SEGMENT: PHYS; ENGI

LANGUAGE: English

REFERENCE COUNT: 14

ENTRY DATE: Entered STN: 1995

Last Updated on STN: 1995

ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

AB The process of saturable-gain degenerate four-wave mixing in a diode-pumped microchip Nd:YVO4 amplifier is investigated. To enhance the efficiency of the interaction, multipass geometries are employed in which the weak signal beam and therefore the conjugate beam experience several passes in the gain medium. Degenerate four-wave mixing reflectivities as high as $R = 10\%$ and $R = 170\%$ have been obtained experimentally for 130-W diode pumping with two-pass and four-pass geometries, respectively. Finally, the imaging capabilities of the volume population hologram written in the Nd:YVO4 amplifier are demonstrated.

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(FILE 'HOME' ENTERED AT 12:35:01 ON 05 APR 2007)

FILE 'MEDLINE, CAPLUS, EMBASE, BIOTECHDS, SCISEARCH, BIOSIS' ENTERED AT 12:36:15 ON 05 APR 2007

L1 13 S (FOUR WAVE MIXING) AND MICROCHIP
L2 13 S MICROCHIP AND WAVE-MIXING
L3 8 DUP REM L1 (5 DUPLICATES REMOVED)
L4 8 DUP REM L2 (5 DUPLICATES REMOVED)

=> s (13 or 14) and DNA

L5 1 (L3 OR L4) AND DNA

=> d all

L5 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2007 ACS on STN
 AN 2004:650170 CAPLUS
 DN 141:184214
 ED Entered STN: 12 Aug 2004
 TI Sensitive sensing based on optical nonlinear wave mixing
 IN Tong, William G.
 PA San Diego State University Foundation, USA
 SO PCT Int. Appl., 58 pp.
 CODEN: PIXXD2
 DT Patent
 LA English
 IC ICM G01J
 CC 79-5 (Inorganic Analytical Chemistry)
 Section cross-reference(s): 3, 9, 80

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2004068087	A2	20040812	WO 2004-US2409	20040127
	WO 2004068087	A3	20050915		
	W:				
	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH,				
	CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD,				
	GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC,				
	LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI				
	US 2006263777	A1	20061123	US 2006-540224	20060808
PRAI	US 2003-443225P	P	20030127		
	WO 2004-US2409	W	20040127		

CLASS

	PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
	WO 2004068087	ICM	G01J
		IPCI	G01J [ICM,7]
		IPCR	G01J0003-42 [I,C*]; G01J0003-42 [I,A]; G01N0021-25 [I,C*]; G01N0021-25 [I,A]; G01N0021-63 [I,C*]; G01N0021-63 [I,A]; G01N0030-00 [I,C*]; G01N0030-74 [I,A]
		ECLA	G01J003/42; G01N021/25B2; G01N021/63H; G01N030/74
	US 2006263777	IPCI	C12Q0001-68 [I,A]; C12M0001-34 [I,A]
		NCL	435/006.000; 435/287.200; 204/451.000
AB	Techniques and systems for using nonlinear four wave mixing to optically measure microarrays with sample cells of biol. or chemical materials. Examples of suitable microarrays include but are not limited to DNA microchips and capillary electrophoresis microarrays.		
ST	sensing optical nonlinear wave		
IT	Apparatus		
	(Microchip; sensitive sensing based on optical nonlinear wave mixing)		
IT	Four wave mixing		
	(Nonlinear; sensitive sensing based on optical nonlinear wave mixing)		
IT	Degenerate four wave mixing		
	Noise		
	Wavelength		
	(Optical; sensitive sensing based on optical nonlinear wave mixing)		
IT	Capillary electrophoresis apparatus		
	(microarrays; sensitive sensing based on optical nonlinear wave mixing)		
IT	DNA		
	RL: ANT (Analyte); ANST (Analytical study)		
	(microchips; sensitive sensing based on optical nonlinear wave mixing)		
IT	Absorption spectra		
	Biological materials		

Capillary electrophoresis
Cations
Chelation
Chemicals
Chromophores
Concentration (condition)
Configuration
 DNA microarray technology
 DNA sequences
Frequency
Heterogeneity
Imaging
Laser radiation
Lasers
Light
Light scattering
Liquids
Microarray technology
Molecules
Nucleic acid hybridization
Optical detectors
Optical filters
Protein microarray technology
Samples
Solutions
 (sensitive sensing based on optical nonlinear wave
 mixing)

IT DNA
Proteins
RL: ANT (Analyte); ANST (Analytical study)
 (sensitive sensing based on optical nonlinear wave
 mixing)

IT Oligonucleotides
RL: CPS (Chemical process); DEV (Device component use); PEP (Physical,
engineering or chemical process); PROC (Process); USES (Uses)
 (sensitive sensing based on optical nonlinear wave
 mixing)

=> d his

(FILE 'HOME' ENTERED AT 12:35:01 ON 05 APR 2007)

FILE 'MEDLINE, CAPLUS, EMBASE, BIOTECHDS, SCISEARCH, BIOSIS' ENTERED AT
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L1 13 S (FOUR WAVE MIXING) AND MICROCHIP
L2 13 S MICROCHIP AND WAVE-MIXING
L3 8 DUP REM L1 (5 DUPLICATES REMOVED)
L4 8 DUP REM L2 (5 DUPLICATES REMOVED)
L5 1 S (L3 OR L4) AND DNA

=> s (l4 or l3) and optical

L6 4 (L4 OR L3) AND OPTICAL

=> d ibib abs l6 1-4

L6 ANSWER 1 OF 4 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2004:1101741 CAPLUS

DOCUMENT NUMBER: 143:218818

TITLE: Compact supercontinuum generation and four-
wave mixing in PCF with 10 ns laser
pulses

AUTHOR(S): Wadsworth, W. J.; Joly, N. Y.; Biancalana, F.; Knight,
J. C.; Birks, T. A.; Russell, P. St. J.

CORPORATE SOURCE: Optoelectronics Group, Department of Physics,
University of Bath, Bath, BA2 7AY, UK
SOURCE: Trends in Optics and Photonics (2004), 96/B(Conference
on Lasers and Electro-Optics, 2004), CThC3/1-CThC3/2
CODEN: TOPRBS
PUBLISHER: Optical Society of America
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The authors report broad flat supercontinuum, 500-1750 nm, using a kHz
train of nanosecond Q-switched microchip laser pulses at 1064 nm
or 1047 nm. The same systems exhibit strong parametric generation of FWM
peaks, e.g. at 732/1945 nm or 895/1315 nm.
REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L6 ANSWER 2 OF 4 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2004:650170 CAPLUS
DOCUMENT NUMBER: 141:184214
TITLE: Sensitive sensing based on optical nonlinear
wave mixing
INVENTOR(S): Tong, William G.
PATENT ASSIGNEE(S): San Diego State University Foundation, USA
SOURCE: PCT Int. Appl., 58 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004068087	A2	20040812	WO 2004-US2409	20040127
WO 2004068087	A3	20050915		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI				
US 2006263777	A1	20061123	US 2006-540224	20060808
PRIORITY APPLN. INFO.:			US 2003-443225P	P 20030127
			WO 2004-US2409	W 20040127

AB Techniques and systems for using nonlinear four wave
mixing to optically measure microarrays with sample cells of biol.
or chemical materials. Examples of suitable microarrays include but are not
limited to DNA microchips and capillary electrophoresis microarrays.

L6 ANSWER 3 OF 4 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2002:507355 CAPLUS
DOCUMENT NUMBER: 137:192365
TITLE: Stokes-like emissions from laser-diode-pumped
microchip neodymium-doped solid-state lasers
AUTHOR(S): Chern, Jyh-Long; Kubota, Tamaki; Lim, Tsong-Shin;
Otsuka, Kenju
CORPORATE SOURCE: Department of Physics, National Cheng Kung University,
Tainan, 70101, Taiwan
SOURCE: Journal of the Optical Society of America B: Optical
Physics (2002), 19(7), 1668-1675
CODEN: JOBPDE; ISSN: 0740-3224
PUBLISHER: Optical Society of America
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Stokes-like IR (1560-1600-nm) emissions, which were observed in laser-diode-
(LD-) pumped microchip Nd-doped lasers, are reexamd. exptl.
Dependences of IR emissions on pump wavelengths, pump densities, and
operating temps. are studied. The response of IR emissions to coherent

probe-beam injection is studied using a tunable LD light source. Optical phonons emitted through Auger recombination processes that result from LD high-d. pumping probably induce resonant intracavity stimulated phonon-sideband emissions.

REFERENCE COUNT: 23 THERE ARE 23 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L6 ANSWER 4 OF 4 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2002:258478 CAPLUS

DOCUMENT NUMBER: 136:408687

TITLE: Supercontinuum generation in air-silica microstructured fibers with nanosecond and femtosecond pulse pumping

AUTHOR(S): Dudley, John M.; Provino, Laurent; Grossard, Nicolas; Maillotte, Herve; Windeler, Robert S.; Eggleton, Benjamin J.; Coen, Stephane

CORPORATE SOURCE: Laboratoire d'Optique P. M. Duffieux, Centre National de la Recherche Scientifique, Unite Mixte de Recherche 6603, and Institut des Mirotechniques de Franche-Comte, Federation de Recherche 67, Universite, de Franche-Comte, Besancon, Fr.

SOURCE: Journal of the Optical Society of America B: Optical Physics (2002), 19(4), 765-771
CODEN: JOBPDE; ISSN: 0740-3224

PUBLISHER: Optical Society of America

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The authors study the generation of supercontinua in air-SiO₂ microstructured fibers by both nanosecond and femtosecond pulse excitation. In the nanosecond expts., a 300-nm broadband visible continuum was generated in a 1.8-m length of fiber pumped at 532 nm by 0.8-ns pulses from a frequency-doubled passively Q-switched Nd:YAG microchip laser. At this wavelength, the dominant mode excited under the conditions of continuum generation is the LP₁₁ mode, and, with nanosecond pumping, self-phase modulation is negligible and the continuum generation is dominated by the interplay of Raman and parametric effects. The spectral extent of the continuum is well explained by calcns. of the parametric gain curves for 4-wave mixing about the zero-dispersion wavelength of the LP₁₁ mode. In the femtosecond expts., an 800-nm broadband visible and near-IR continuum was generated in a 1-m length of fiber pumped at 780 nm by 100-fs pulses from a Kerr-lens model-locked Ti:sapphire laser. At this wavelength, excitation and continuum generation occur in the LP₀₁ mode, and the spectral width of the observed continuum is consistent with the phase-matching bandwidth for parametric processes calculated for this fiber mode. In addition, numerical simulations based on an extended nonlinear Schrodinger equation were used to model supercontinuum generation in the femtosecond regime, with the simulation results reproducing the major features of the exptl. observed spectrum.

REFERENCE COUNT: 36 THERE ARE 36 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

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(FILE 'HOME' ENTERED AT 12:35:01 ON 05 APR 2007)

FILE 'MEDLINE, CAPLUS, EMBASE, BIOTECHDS, SCISEARCH, BIOSIS' ENTERED AT 12:36:15 ON 05 APR 2007

L1 13 S (FOUR WAVE MIXING) AND MICROCHIP
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L3 8 DUP REM L1 (5 DUPLICATES REMOVED)
L4 8 DUP REM L2 (5 DUPLICATES REMOVED)
L5 1 S (L3 OR L4) AND DNA

L6 4 S (L4 OR L3) AND OPTICAL

=> d ibib abs l3 1-8

L3 ANSWER 1 OF 8 SCISEARCH COPYRIGHT (c) 2007 The Thomson Corporation on STN

ACCESSION NUMBER: 2006:653014 SCISEARCH
THE GENUINE ARTICLE: 056VM
TITLE: Enhanced visible continuum generation from a microchip 1064nm laser
AUTHOR: Xiong C (Reprint); Witkowska A; Leon-Saval S G; Birks T A; Wadsworth W J
CORPORATE SOURCE: Univ Bath, Dept Phys, Ctr Photon & Photon Mat, Bath BA2 7AY, Avon, England (Reprint)
w.j.wadsworth@bath.ac.uk
COUNTRY OF AUTHOR: England
SOURCE: OPTICS EXPRESS, (26 JUN 2006) Vol. 14, No. 13, pp. 6188-6193.
ISSN: 1094-4087.
PUBLISHER: OPTICAL SOC AMER, 2010 MASSACHUSETTS AVE NW, WASHINGTON, DC 20036 USA.
DOCUMENT TYPE: Article; Journal
LANGUAGE: English
REFERENCE COUNT: 9
ENTRY DATE: Entered STN: 13 Jul 2006
Last Updated on STN: 13 Jul 2006

ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

AB We demonstrate a cascaded nonlinear process using pump conversion to 742 nm by four-wave mixing in the normal dispersion regime then continuum generation by modulation instability to generate bright single-mode visible continuum with an average power up to -20 dBm/nm, from a compact 1064 nm infrared source in a monolithic single-mode photonic crystal fibre with a tapered section in one end.

L3 ANSWER 2 OF 8 CAPLUS COPYRIGHT 2007 ACS on STN DUPLICATE 1

ACCESSION NUMBER: 2004:650170 CAPLUS
DOCUMENT NUMBER: 141:184214
TITLE: Sensitive sensing based on optical nonlinear wave mixing
INVENTOR(S): Tong, William G.
PATENT ASSIGNEE(S): San Diego State University Foundation, USA
SOURCE: PCT Int. Appl., 58 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
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PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004068087	A2	20040812	WO 2004-US2409	20040127
WO 2004068087	A3	20050915		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI				
US 2006263777	A1	20061123	US 2006-540224	20060808
PRIORITY APPLN. INFO.:			US 2003-443225P	P 20030127
			WO 2004-US2409	W 20040127

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L3 ANSWER 3 OF 8 CAPLUS COPYRIGHT 2007 ACS on STN
 ACCESSION NUMBER: 2004:1101741 CAPLUS
 DOCUMENT NUMBER: 143:218818
 TITLE: Compact supercontinuum generation and four-wave mixing in PCF with 10 ns laser pulses
 AUTHOR(S): Wadsworth, W. J.; Joly, N. Y.; Biancalana, F.; Knight, J. C.; Birks, T. A.; Russell, P. St. J.
 CORPORATE SOURCE: Optoelectronics Group, Department of Physics, University of Bath, Bath, BA2 7AY, UK
 SOURCE: Trends in Optics and Photonics (2004), 96/B(Conference on Lasers and Electro-Optics, 2004), CThC3/1-CThC3/2
 CODEN: TOPRBS
 PUBLISHER: Optical Society of America
 DOCUMENT TYPE: Journal
 LANGUAGE: English
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 REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 4 OF 8 MEDLINE on STN DUPLICATE 2
 ACCESSION NUMBER: 2003453285 MEDLINE
 DOCUMENT NUMBER: PubMed ID: 14514112
 TITLE: Generation of a broadband single-mode supercontinuum in a conventional dispersion-shifted fiber by use of a subnanosecond microchip laser.
 AUTHOR: Mussot Arnaud; Sylvestre Thibaut; Provino Laurent; Maillotte Herve
 CORPORATE SOURCE: Laboratoire d'Optique P. M. Duffieux, Unite Mixte de Recherche, Centre National de la Recherche Scientifique/Universite de Franche-Comte 6603, 25030 Besancon cedex, France.. amussot@univ-fcomte.fr
 SOURCE: Optics letters, (2003 Oct 1) Vol. 28, No. 19, pp. 1820-2. Journal code: 7708433. ISSN: 0146-9592.
 PUB. COUNTRY: United States
 DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
 LANGUAGE: English
 FILE SEGMENT: NONMEDLINE; PUBMED-NOT-MEDLINE
 ENTRY MONTH: 200311
 ENTRY DATE: Entered STN: 30 Sep 2003
 Last Updated on STN: 8 Nov 2003
 Entered Medline: 7 Nov 2003

AB We report the experimental generation, simply by use of a subnanosecond microchip laser at 532 nm and a conventional dispersion-shifted fiber, of a supercontinuum that spans more than 1100 nm. We show by detailed spectral analysis that this supercontinuum originates from a preliminary four-wave mixing process with multimode phase matching and subsequent double-cascade stimulated Raman scattering and is transversely single mode as a result of Raman-induced mode competition. This technique is believed to be the simplest configuration that allows one to generate a stable supercontinuum.

L3 ANSWER 5 OF 8 CAPLUS COPYRIGHT 2007 ACS on STN
 ACCESSION NUMBER: 2002:507355 CAPLUS
 DOCUMENT NUMBER: 137:192365
 TITLE: Stokes-like emissions from laser-diode-pumped microchip neodymium-doped solid-state lasers
 AUTHOR(S): Chern, Jyh-Long; Kubota, Tamaki; Lim, Tsong-Shin; Otsuka, Kenju
 CORPORATE SOURCE: Department of Physics, National Cheng Kung University, Tainan, 70101, Taiwan

SOURCE: Journal of the Optical Society of America B: Optical
Physics (2002), 19(7), 1668-1675
CODEN: JOBPDE; ISSN: 0740-3224
PUBLISHER: Optical Society of America
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Stokes-like IR (1560-1600-nm) emissions, which were observed in laser-diode-
(LD-) pumped microchip Nd-doped lasers, are reexamd. exptl.
Dependences of IR emissions on pump wavelengths, pump densities, and
operating temps. are studied. The response of IR emissions to coherent
probe-beam injection is studied using a tunable LD light source. Optical
phonons emitted through Auger recombination processes that result from LD
high-d. pumping probably induce resonant intracavity stimulated
phonon-sideband emissions.
REFERENCE COUNT: 23 THERE ARE 23 CITED REFERENCES AVAILABLE FOR THIS
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 6 OF 8 CAPLUS COPYRIGHT 2007 ACS on STN DUPLICATE 3
ACCESSION NUMBER: 2002:258478 CAPLUS
DOCUMENT NUMBER: 136:408687
TITLE: Supercontinuum generation in air-silica
microstructured fibers with nanosecond and femtosecond
pulse pumping
AUTHOR(S): Dudley, John M.; Provino, Laurent; Grossard, Nicolas;
Maillotte, Herve; Windeler, Robert S.; Eggleton,
Benjamin J.; Coen, Stephane
CORPORATE SOURCE: Laboratoire d'Optique P. M. Duffieux, Centre National
de la Recherche Scientifique, Unite Mixte de Recherche
6603, and Institut des Microtechniques de
Franche-Comte, Federation de Recherche 67, Universite,
de Franche-Comte, Besancon, Fr.
SOURCE: Journal of the Optical Society of America B: Optical
Physics (2002), 19(4), 765-771
CODEN: JOBPDE; ISSN: 0740-3224
PUBLISHER: Optical Society of America
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The authors study the generation of supercontinua in air-SiO₂
microstructured fibers by both nanosecond and femtosecond pulse
excitation. In the nanosecond expts., a 300-nm broadband visible
continuum was generated in a 1.8-m length of fiber pumped at 532 nm by
0.8-ns pulses from a frequency-doubled passively Q-switched Nd:YAG
microchip laser. At this wavelength, the dominant mode excited
under the conditions of continuum generation is the LP₁₁ mode, and, with
nanosecond pumping, self-phase modulation is negligible and the continuum
generation is dominated by the interplay of Raman and parametric effects.
The spectral extent of the continuum is well explained by calcs. of the
parametric gain curves for 4-wave mixing about the zero-dispersion
wavelength of the LP₁₁ mode. In the femtosecond expts., an 800-nm
broadband visible and near-IR continuum was generated in a 1-m length of
fiber pumped at 780 nm by 100-fs pulses from a Kerr-lens model-locked
Ti:sapphire laser. At this wavelength, excitation and continuum
generation occur in the LP₀₁ mode, and the spectral width of the observed
continuum is consistent with the phase-matching bandwidth for parametric
processes calculated for this fiber mode. In addition, numerical simulations
based on an extended nonlinear Schrodinger equation were used to model
supercontinuum generation in the femtosecond regime, with the simulation
results reproducing the major features of the exptl. observed spectrum.
REFERENCE COUNT: 36 THERE ARE 36 CITED REFERENCES AVAILABLE FOR THIS
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 7 OF 8 CAPLUS COPYRIGHT 2007 ACS on STN DUPLICATE 4
ACCESSION NUMBER: 2000:347428 CAPLUS
DOCUMENT NUMBER: 133:24317

TITLE: 1.5- μ m emissions from laser-diode-pumped Nd-doped microchip solid-state lasers
 AUTHOR(S): Hwong, Siao-Lung; Chern, Jyh-Long; Otsuka, Kenju; Huang, Yu-Hsiang; Kawai, Ryoji; Ohki, Kazuyoshi
 CORPORATE SOURCE: Department of Physics, National Cheng Kung University, Tainan, 70101, Taiwan
 SOURCE: Optics Letters (2000), 25(9), 646-648
 CODEN: OPLEDP; ISSN: 0146-9592
 PUBLISHER: Optical Society of America
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 AB 1.5- μ m emissions from Nd:YAG, Nd:YVO4, and LiNdP4O12 microchip lasers pumped by laser diodes were observed. These coherent emissions are attributed to the effect of high-energy modified lattice vibration owing to the existence of Nd ions as well as to stimulated intracavity Raman scattering enhanced by the microchip configuration. A 4-wave mixing process involving 2 lasing fields and a Stokes field was identified as the generator of new adjacent 1.5- μ m emission.
 REFERENCE COUNT: 18 THERE ARE 18 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 8 OF 8 SCISEARCH COPYRIGHT (c) 2007 The Thomson Corporation on STN
 ACCESSION NUMBER: 1995:197296 SCISEARCH
 THE GENUINE ARTICLE: QM885
 TITLE: EFFICIENT DEGENERATE 4-WAVE-MIXING IN A DIODE-PUMPED MICROCHIP ND-YVO4 AMPLIFIER
 AUTHOR: BRIGNON A (Reprint); FEUGNET G; HUIGNARD J P; POCHOLLE J P
 CORPORATE SOURCE: THOMSON CSF, CENT RECH LAB, F-91404 ORSAY, FRANCE (Reprint)
 COUNTRY OF AUTHOR: FRANCE
 SOURCE: OPTICS LETTERS, (15 MAR 1995) Vol. 20, No. 6, pp. 548-550. ISSN: 0146-9592.
 PUBLISHER: OPTICAL SOC AMER, 2010 MASSACHUSETTS AVE NW, WASHINGTON, DC 20036.
 DOCUMENT TYPE: Article; Journal
 FILE SEGMENT: PHYS; ENGI
 LANGUAGE: English
 REFERENCE COUNT: 14
 ENTRY DATE: Entered STN: 1995
 Last Updated on STN: 1995

ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

AB The process of saturable-gain degenerate four-wave mixing in a diode-pumped microchip Nd:YVO4 amplifier is investigated. To enhance the efficiency of the interaction, multipass geometries are employed in which the weak signal beam and therefore the conjugate beam experience several passes in the gain medium. Degenerate four-wave mixing reflectivities as high as $R = 10\%$ and $R = 170\%$ have been obtained experimentally for 130-W diode pumping with two-pass and four-pass geometries, respectively. Finally, the imaging capabilities of the volume population hologram written in the Nd:YVO4 amplifier are demonstrated.

=> FIL STNGUIDE
 COST IN U.S. DOLLARS
 FULL ESTIMATED COST

SINCE FILE	TOTAL
ENTRY	SESSION
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 CA SUBSCRIBER PRICE

SINCE FILE	TOTAL
ENTRY	SESSION
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AND TECHNOLOGY CORPORATION, AND FACHINFORMATIONSZENTRUM KARLSRUHE

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LAST RELOADED: Mar 30, 2007 (20070330/UP).